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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/803,822	03/18/2004	William Paul Cook	2003-0718.02/4670-271	7046

7590 04/20/2007  
LEXMARK INTERNATIONAL, INC.  
ATT: JOHN J. McARDLE, JR.  
740 WEST NEW CIRCLE ROAD  
LEXINGTON, KY 40550

EXAMINER

KUMAR, RAKESH

ART UNIT	PAPER NUMBER
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3654

SHORTENED STATUTORY PERIOD OF RESPONSE	MAIL DATE	DELIVERY MODE
3 MONTHS	04/20/2007	PAPER

**Please find below and/or attached an Office communication concerning this application or proceeding.**

If NO period for reply is specified above, the maximum statutory period will apply and will expire 6 MONTHS from the mailing date of this communication.

<b>Office Action Summary</b>	Application No.	Applicant(s)	
	10/803,822	COOK ET AL.	
	Examiner	Art Unit	
	Rakesh Kumar	3654	

**-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --**

**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

- 1) ☒ Responsive to communication(s) filed on 03 January 2007.
- 2a) ☒ This action is **FINAL**.                      2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

- 4) ☒ Claim(s) 1-51 is/are pending in the application.
- 4a) Of the above claim(s) 1-30 and 32-38 is/are withdrawn from consideration.
- 5) ☒ Claim(s) 31, 39 and 40 is/are allowed.
- 6) ☒ Claim(s) 41-51 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

**Application Papers**

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 18 March 2004 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

**Priority under 35 U.S.C. § 119**

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All    b) ☐ Some \*    c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- \* See the attached detailed Office action for a list of the certified copies not received.

**Attachment(s)**

- |  |   |
|--|---|
| 1) <input type="checkbox"/> Notice of References Cited (PTO-892)                     | 4) <input type="checkbox"/> Interview Summary (PTO-413)           |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | Paper No(s)/Mail Date. _____                                      |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08)          | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| Paper No(s)/Mail Date _____  | 6) <input type="checkbox"/> Other: _____                          |

## Final Rejection

### ***Claim Rejections - 35 USC § 103***

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claims 41-51 are rejected under 35 U.S.C. 103(a) as being unpatentable over Kim (U.S. Patent Number 6,837,489) in view of Takagi et al. (U.S. Patent Number 4,986,525) in view of Park (U.S. Patent Number 6,648,322) and in further view of Matsuda (U.S. Patent Number 6,568,674).

Referring to claims 41-51. Kim discloses an automatic document feeder (ADF) apparatus comprising:

a motor 70;

a pick mechanism consisting of a clutch member 22, gears 21, 25, 11 and a pickup roller 10 operatively connected to the motor 70 (Figure 1 and 3), creating a feed nip region as the roller 10 engages the topmost media sheet in the media tray (Figure 1), the pick mechanism (gears 21, 25, 11 and a pickup roller 10) positioned to move a media sheet 1 from an input tray;

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a first gear train set 60 (gears 62, 61) having a first ratio and operatively connecting the motor 70 to the pick mechanism (gears 21, 25, 11 and a pickup roller 10);

a feed nip created by a distribution roller 50 in contact with the media sheet 1 operatively connected to the motor 70 to receive the media sheet 1 and forward the media sheet 1 along a media path, the feed nip positioned downstream from the pick mechanism (gears 21, 25, 11 and a pickup roller 10);

a second gear 80 (gears 81, 82, 83) set having a second gear ratio and operatively connecting the motor 70 to the feed nip created by a distribution roller 50 in contact with the media sheet 1;

the motor 70 drives the pick mechanism along with a intermediate roller 110 used to maintain steady tension in the media sheet 1 as it is moved to the feed nip of the distribution roller.

Kim does not disclose positioning a feed nip a distance less than a length of the media sheet downstream from the pick mechanism, in addition Kim does not specifically disclose the pick mechanism to be operating at a first speed and the feed nip roller operating at a different second speed.

It would have been obvious to one of ordinary skill in the art at the time the invention was made to modify the teachings of Kim to reduce the distance between the pick mechanism and the feed nip to be less than the length of the media sheet such that at least one roller maintains contact with the media sheet at all times while being driven

in the media path because a consistent level of tension in the media sheet is maintained in order to reduce media buckling and misalignment of the media sheet as it is moved along the media path.

Further more, Kim discloses a first and a second gear train disposed to transfer power to the pick mechanism and the feed nip roller. These two gear trains differ in configuration and by the number of gears comprising the gear sets, thus indicating that the rotational torque and speed transferred by the motor to the above mentioned mechanisms is construed and understood to be different. By maintaining different speeds at the two ends, tension in the media sheet can be maintained because the mechanism would reduce paper jams in the process of being driven in the media path.

Takagi discloses a sheet feeder device comprising a swing arm 15 having a first gear 16 disposed on the first arm and a second gear 17 disposed on the second arm. Gears 16 and 17 are free to rotate in conjunction with the pivotal gear 14 as a torque is transferred from motor M to feed roller 36 (Figure 2A-2B, Col 5 lines 23-29, Col 7 line 15). The swing arm 15 is positionable between a first orientation with the first gear 16 in contact with idler gear 19 and a second orientation with the second gear 17 in contact with idler gear 20. The swing of the swing arm 15 as shown by Takagi in figure 2A and 2B is understood and construed to be in a range between 0° to 45°.

Takagi does not disclose the first arm having an even number of gears, and the second arm having an odd number of gears

Park discloses a paper feeder device comprising a movable first arm assembly 43 and a second arm assembly 46 consisting of multiple gears disposed on the arms. The first arm assembly 43 having an even number of gears (43a, 43b, 43c and 43d) and the second arm assembly having an odd number of gears (45, 45b, and 45c) (Figure 6 and 7).

It would have been obvious to one of ordinary skill in the art at the time the invention was made to modify the teachings Kim in view of Park and Takagi to include a movable swing arm consisting of an even number of gears on a first arm and odd number of gears on the second arm to further vary the rotational speed being transmitted from the motor 70 to the distribution roller 50 as disclosed by Kim.

It would have been further obvious to one of ordinary skill in the art at the time the invention was made to modify the teachings Kim in view of Park and Takagi to include a movable swing arm near a distribution roller as to engage the feed nip with either the first or the second gear to controllably vary the rotational speed of the distribution roller and maintain variable tension as the media sheet progress through the media path.

Matsuda discloses a feed apparatus comprising a metering nip created by aligning a discharge roller 23 with a driven roller 24 positioned downstream from the feed nip between rollers 11 and 24 and operating at a speed greater than the speed driving the feed nip rollers 11 and 24 (Figure 2 and 3). Matsuda also discloses the discharge roller 23 having a torsion spring clutch 43 to prevent a slip of the discharge roller 23 when the media sheet is in contact with both the metering nip and the feed nip

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(Col 5 line 39-60). Further more Matsuda discloses using a one way clutch in the pick roller gear 20 in the pick roller 1.

It would have been obvious to one of ordinary skill in the art at the time the invention was made to modify the teaching of Kim in view of Park and Takagi to include a metering nip as taught by Matsuda on the path beyond the distribution roller 50 in Kim, operating at a speed higher than the distribution roller 50 because it would prevent media paper slippage, when the media is moving between the feed nip and the metering nip.

In addition a slip clutch mechanism can be disposed either in the metering nip rollers or the preceding distribution rollers to prevent a slippage of the rollers as the media sheet traveling at one speed enters a metering nip, wherein the metering nip is rotating at a different speed, a slip clutch can to disposed on the pick mechanism because it would slippage of the rollers as the media is pulled at a higher speed.

#### ***Allowable Subject Matter***

Claims 31,39 and 40 are allowed.

#### ***Response to Arguments***

Applicant's arguments filed 01/23/2007 have been fully considered but they are not persuasive.

In response to applicant's argument that there is no suggestion to combine the references, the examiner recognizes that obviousness can only be established by

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combining or modifying the teachings of the prior art to produce the claimed invention where there is some teaching, suggestion, or motivation to do so found either in the references themselves or in the knowledge generally available to one of ordinary skill in the art. See *In re Fine*, 837 F.2d 1071, 5 USPQ2d 1596 (Fed. Cir. 1988) and *In re Jones*, 958 F.2d 347, 21 USPQ2d 1941 (Fed. Cir. 1992). In this case, the cited arts of Kim, Takagi, Park and Matsuda all teach of apparatuses used to feed documents, thus the motivation of combine the teaching is to improve the feeding mechanism of a feeder.

In response to applicant's argument that the cited art is nonanalogous art, it has been held that a prior art reference must either be in the field of applicant's endeavor or, if not, then be reasonably pertinent to the particular problem with which the applicant was concerned, in order to be relied upon as a basis for rejection of the claimed invention. See *In re Oetiker*, 977 F.2d 1443, 24 USPQ2d 1443 (Fed. Cir. 1992). In this case, the cited arts all teach a feeding mechanism.

In response to applicant's argument that it is not obvious to combine the teaching of Kim with the swing arm of Takagi, the test for obviousness is not whether the features of a secondary reference may be bodily incorporated into the structure of the primary reference; nor is it that the claimed invention must be expressly suggested in any one or all of the references. Rather, the test is what the combined teachings of the references would have suggested to those of ordinary skill in the art. See *In re Keller*, 642 F.2d 413, 208 USPQ 871 (CCPA 1981).



In response to applicant's argument that the examiner's conclusion of obviousness is based upon improper hindsight reasoning, it must be recognized that any judgment on obviousness is in a sense necessarily a reconstruction based upon hindsight reasoning. But so long as it takes into account only knowledge which was within the level of ordinary skill at the time the claimed invention was made, and does not include knowledge gleaned only from the applicant's disclosure, such a reconstruction is proper. See *In re McLaughlin*, 443 F.2d 1392, 170 USPQ 209 (CCPA 1971).

Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire **THREE MONTHS** from the mailing date of this action. In the event a first reply is filed within **TWO MONTHS** of the mailing date of this final action and the advisory action is not mailed until after the end of the **THREE-MONTH** shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than **SIX MONTHS** from the date of this final action.

### ***Conclusion***

The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

Schoedinger (US 6,227,534) teaches a pick arm mechanism.

Ha (US 6,765,698) teaches a pivoting swing arm (21).

Kang (US 2004/0109056) teaches of a reversible drive mechanism.

Any references not explicitly discussed above but made of record are considered relevant to the prosecution of the instant application.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Rakesh Kumar whose telephone number is (517) 272-8314. The examiner can normally be reached on 8:00AM - 4:30PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Gene Crawford can be reached on (571) 272-6911. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

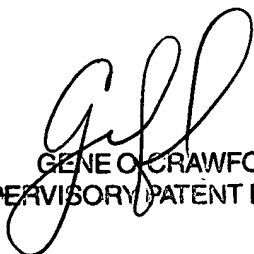
Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see

<http://pair-direct.uspto.gov>.

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Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

RK  
April 16, 2007

  
GENE O. CRAWFORD  
SUPERVISORY PATENT EXAMINER